UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
PANNALA, SATHYANARAYA R

ART UNIT	PAPER NUMBER
2164	

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *13 June 2006*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Applicant's Amendment filed on 6/13/2006in response to Non-final Office Action

has been entered with amended claims 1, 6-7, 12 and 14-16. In this Office Action,

claims 1-20 are pending.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

3.   Claims 1-20 are rejected under 35 U.S.C. § 101, because none of the claims are

directed to statutory subject matter. Independent claims 1, 6 and 14 deals with simple

abstract ideas. A claim that recites a computer that solely calculates a mathematical

formula or a computer disk that solely stores a mathematical formula is not directed to

the type of subject matter eligible for patent protection. See Diehr, 450 US at 186 and

Gottschalk v. Benson, 409 U.S. 63,71-72(1972).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
>
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
>
> the prior art are such that the subject matter as a whole would have been obvious at the time the
>
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
>
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kilpatrick et al. (US Patent 6,742,124) hereinafter Kilpatrick, and in view of Chan et al.

(US Patent 6,697,844) hereinafter Chan

6.   As per independent claim 1, Kilpatrick teaches an intrusion detection operating

efficiently in real-time. Computational efficiency is generated through the representation

of known sequences of system calls in a distance matrix. The distance matrix indirectly

specifies known sequences by specifying allowable separation distances between parts

of systems (col. 3, lines 11-16). Kilpatrick teaches the claimed, calculating a

Levenshtein matrix of said first string and said second string (Fig. 6, col. 10, lines 7-10).

Kilpatrick teaches the claimed, determining a Levenshtein distance from said

Levenshtein matrix (Fig. 6, col. 10, lines 27-28). Kilpatrick does not explicitly teach

largest common substring between strings. However, Chan teaches the claimed,

determining a largest common substring (Fig. 4, col. 9, lines 2-6). Thus, it would have

been obvious to one of ordinary skill in the data processing art at the time of the

invention, to have combined the teachings of the cited references because Chan's

teachings would have allowed Kilpatrick's method to reduce the amount of latency by

caching and prefetching components of electronic mail messages using information

relating to similar objects that were previously supplied to the client by the mail server

(col. 2, lines 22-25 and lines 33-35). Chan teaches the claimed, determining a similarity

between a set of characters in said first string and a set of characters in said second

string as a function of said Levenshtein distance and said largest common substring

(Fig. 4-5, 7A-B, col. 9, lines 2-6 and col. 10, lines 55-62).

7.   As per dependent claim 2, Kilpatrick teaches the claimed, determining a largest

common substring from said Levenshtein distance matrix comprises determining a

longest diagonal of equal hamming distances of a lowest value (Fig. 5, Table 2, col. 9,

lines 31-45).

8.   As per dependent claim 3 Kilpatrick teaches the claimed, calculating a

Levenshtein score (Fig. 5, col. 9, lines 44-45).

9.   As per dependent claim 4, further comprising determining the length of the

largest common substring (Fig. 5, Table 2, col. 9, lines 31-35).

10.   As per dependent claim 5, further comprising calculating a largest common

substring score (Fig. 5, Table 2, col. 9, lines 31-35).

11.   Claims 6-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kilpatrick et al. (US Patent 6,742,124) hereinafter Kilpatrick, in view of Haigh et al.

(USPA Pub. 2003/0004716 A1) hereinafter Haigh, and in view of Chan et al (US Patent

6,697,844) hereinafter Chan.

12.   As per independent claim 6, Kilpatrick teaches an intrusion detection operating

efficiently in real-time. Computational efficiency is generated through the representation

of known sequences of system calls in a distance matrix. The distance matrix indirectly

specifies known sequences by specifying allowable separation distances between parts

of systems (col. 3, lines 11-16). Kilpatrick teaches the claimed, calculating a

Levenshtein matrix of a first string and a second string (Fig. 6, col. 10, lines 7-10).

Kilpatrick teaches the claimed, determining a Levenshtein distance from said

Levenshtein matrix (Fig. 6, col. 10, lines 27-28). Kilpatrick does not explicitly teach

largest common substring between strings. However, Haigh teaches the claimed,

determining a largest common substring (Fig. 6, page 5, paragraph [0053-0054]). Thus,

it would have been obvious to one of ordinary skill in the data processing art at the time

of the invention, to have combined the teachings of the cited references because

Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text

within documents in order to overcome difficulties, time consuming and tedious while

using rules or regular expressions (page 1, paragraph [0011]). Kilpatrick teaches the

claimed, calculating a Levenshtein score as a function of said Levenshtein distance

(Fig. 6, col. 9, lines 44-45). Kilpatrick teaches the claimed, calculating a largest

common substring score as a function of said largest common substring (Fig. 6,

Table 2, col. 9, lines 31-35). Kilpatrick and Haigh do not explicitly teach determining

similarity between two strings. However, Chan teaches the claimed, determining a

similarity between a set of characters in said first string and a set of characters in said

second string as a function of said Levenshtein distance and said largest common

substring (Fig. 4-5, 7A-B, col. 9, lines 2-6 and col. 10, lines 55-62). Thus, it would have

been obvious to one of ordinary skill in the data processing art at the time of the

invention, to have combined the teachings of the cited references because Chan's

teachings would have allowed Kilpatrick's method to reduce the amount of latency by

caching and prefetching components of electronic mail messages using information

relating to similar objects that were previously supplied to the client by the mail server

(col. 2, lines 22-25 and lines 33-35).

13.   As per dependent claim 7, Kilpatrick teaches the claimed, calculating an acronym

score of said first string and said second string (Fig. 6, col. 9, lines 44-45).

14.   As per dependent claim 8, Kilpatrick and Haigh combined teaches claim 6.

Haigh teaches the claimed, calculating a weighted acronym score comprising a product

of said acronym score and an acronym weight factor (Fig. 7, page 5, paragraph [0057]).

Thus, it would have been obvious to one of ordinary skill in the data processing art at

the time of the invention, to have combined the teachings of the cited references

because Haigh's teachings would have allowed Kilpatrick's method to identify and

categorize text within documents in order to overcome difficulties, time consuming and

tedious while using rules or regular expressions (page 1, paragraph [0011]).

15.   As per dependent claim 9, Kilpatrick and Haigh combined teaches claim 6.

Haigh teaches the claimed, calculating a weighted Levenshtein score comprising a

product of said Levenshtein score and a Levenshtein weight factor calculating a

weighted largest common substring score comprising a product of said largest common

substring score and a largest common substring weight factor and calculating a

Levenshtein largest common substring score comprising a sum of said weighted

Levenshtein score and said weighted largest common substring score (Fig. 7, page 5,

paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data

processing art at the time of the invention, to have combined the teachings of the cited

references because Haigh's teachings would have allowed Kilpatrick's method to

identify and categorize text within documents in order to overcome difficulties, time

consuming and tedious while using rules or regular expressions (page 1, paragraph

[0011]).

16.   As per dependent claim 10, Kilpatrick and Haigh combined teaches claim 6.

Haigh teaches the claimed, a sum of said Levenshtein weight factor and said largest

common substring weight factor is equal to one (Fig. 7, page 5, paragraph [0057]).

Thus, it would have been obvious to one of ordinary skill in the data processing art at

the time of the invention, to have combined the teachings of the cited references

because Haigh's teachings would have allowed Kilpatrick's method to identify and

categorize text within documents in order to overcome difficulties, time consuming and

tedious while using rules or regular expressions (page 1, paragraph [0011]).

17.   As per dependent claim 11, Kilpatrick and Haigh combined teaches claim 6.

Haigh teaches the claimed, calculating a first weighted numerical score comprising a

product of said Levenstein/largest common substring score and a string weight factor

(Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of ordinary

skill in the data processing art at the time of the invention, to have combined the

teachings of the cited references because Haigh's teachings would have allowed

Kilpatrick's method to identify and categorize text within documents in order to

overcome difficulties, time consuming and tedious while using rules or regular

expressions (page 1, paragraph [0011]).

18. .   As per dependent claim 12, Kilpatrick and Haigh combined teaches claim 6.

Haigh teaches the claimed, calculating an acronym score, calculating a weighted

acronym score comprising a product of said acronym score and an acronym weight

factor and calculating a second weighted numerical score comprising a sum of said first

weighted numerical score and said weighted acronym score of said first string and said

second string (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to

one of ordinary skill in the data processing art at the time of the invention, to have

combined the teachings of the cited references because Haigh's teachings would have

allowed Kilpatrick's method to identify and categorize text within documents in order to

overcome difficulties, time consuming and tedious while using rules or regular

expressions (page 1, paragraph [0011]).

19.   As per dependent claim 13, Kilpatrick and Haigh combined teaches claim 6.

Haigh teaches the claimed, a sum of said string weight factor and said acronym weight

factor is equal to one (Fig. 7, page 5, paragraph [0057]). Thus, it would have been

obvious to one of ordinary skill in the data processing art at the time of the invention, to

have combined the teachings of the cited references because Haigh's teachings would

have allowed Kilpatrick's method to identify and categorize text within documents in

order to overcome difficulties, time consuming and tedious while using rules or regular

expressions (page 1, paragraph [0011]).

20.   As per independent claim 14, Kilpatrick teaches an intrusion detection operating

efficiently in real-time. Computational efficiency is generated through the representation

of known sequences of system calls in a distance matrix. The distance matrix indirectly

specifies known sequences by specifying allowable separation distances between parts

of systems (col. 3, lines 11-16). Kilpatrick teaches the claimed, calculating a

Levenshtein matrix of a first string and a second string (Fig. 6, col. 10, lines 7-10).

Kilpatrick teaches the claimed, determining a Levenshtein distance from said

Levenshtein matrix (Fig. 6, col. 10, lines 27-28). Kilpatrick does not explicitly teach

largest common substring between strings. However, Chan teaches the claimed,

determining a largest common substring (Fig. 4, col. 9, lines 2-6). Kilpatrick teaches the

claimed, calculating a Levenshtein score as a function of said largest common substring

(Fig. 6, col. 10, lines 7-10). Kilpatrick does not explicitly teach largest common substring

between strings. However, Haigh teaches the claimed, calculating a first numerical

score as a function of said Levenshtein score and said largest common substring score

(Fig. 6, page 5, paragraph [0053-0054]). Thus, it would have been obvious to one of

ordinary skill in the data processing art at the time of the invention, to have combined

the teachings of the cited references because Haigh's teachings would have allowed

Kilpatrick's method to identify and categorize text within documents in order to

overcome difficulties, time consuming and tedious while using rules or regular

expressions (page 1, paragraph [0011]). Kilpatrick does not explicitly teach largest

common substring between strings. However, Chan teaches the claimed, calculating a

largest common substring score as a function of said largest common substring (Fig. 4,

col. 9, lines 2-6). Kilpatrick and Haigh do not explicitly teach largest common substring

between strings, However, Chan teaches the claimed, numerical score is a first

quantification of a similarity between a set of characters in said first string and a set of

characters in said second string as a function of said Levenshtein distance and said

largest common substring (Fig. 4-5, 7A-B, col. 9, lines 2-6 and col. 10, lines 55-62).

Thus, it would have been obvious to one of ordinary skill in the data processing art at

the time of the invention, to have combined the teachings of the cited references because Chan's teachings would have allowed Kilpatrick's method to reduce the amount of latency by caching and prefetching components of electronic mail messages using information relating to similar objects that were previously supplied to the client by the mail server (col. 2, lines 22-25 and lines 33-35).

21.   As per dependent claim 15, Kilpatrick teaches the claimed, calculating a subtracting the resultant of dividing said Levenshtein distance by an average of a length of said first string and a length of said second string from one (Fig. 6, col. 9, lines 44-45, col. 10, lines 27-28).

22.   As per dependent claim 16, Kilpatrick, Haigh and Chan combined teaches claim 14. Haigh teaches the claimed, determining a length of said largest common substring from said Levenshtein matrix and dividing said length of said largest common substring by an average of a length of said first string and a length of said second string (Fig. 7, page 5, paragraph [0053-0054 and 0057]). Thus, it would have been obvious to one of ordinary skill in the data processing art at the time of the invention, to have combined the teachings of the cited references because Haigh's teachings would have allowed Kilpatrick's method to identify and categorize text within documents in order to overcome difficulties, time consuming and tedious while using rules or regular expressions (page 1, paragraph [0011]).

23.   As per dependent claim 17, Kilpatrick, Haigh and Chan combined teaches

claim 14. Haigh teaches the claimed, calculating a weighted Levenshtein score

comprising a product of said Levenshtein score and a Levenshtein weight factor,

calculating a weighted largest common substring score comprising a product of said

largest common substring score and a largest common substring weight factor and

summing said weighted Levenshtein score and said weighted largest common substring

score (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of

ordinary skill in the data processing art at the time of the invention, to have combined

the teachings of the cited references because Haigh's teachings would have allowed

Kilpatrick's method to identify and categorize text within documents in order to

overcome difficulties, time consuming and tedious while using rules or regular

expressions (page 1, paragraph [0011]).

24.   As per dependent claim 18, Kilpatrick teaches the claimed, calculating an

acronym score and calculating a second numerical score as a function of said first

numerical score and said acronym score (Fig. 6, col. 9, lines 44-45).

25.   As per dependent claim 19, Kilpatrick, Haigh and Chan combined teaches

claim 14. Haigh teaches the claimed, calculating a weighted Levenshtein score

comprising a product of said Levenshtein score and a Levenshtein weight factor,

calculating a weighted largest common substring score comprising a product of said

largest common substring score and a largest common substring weight factor,

calculating a Levenshtein largest common substring score comprising a sum of said

weighted Levenshtein score and said weighted largest common substring score,

calculating a weighted Levenshtein/largest common substring score comprising a

product of said Levenshtein/largest common substring score and a Levenshtein/largest

common substring weight factor, calculating a weighted acronym score comprising a

product of said acronym score and an acronym score weight factor and summing said

weighted Levenshtein largest common substring score and said weighted acronym

score (Fig. 7, page 5, paragraph [0057]). Thus, it would have been obvious to one of

ordinary skill in the data processing art at the time of the invention, to have combined

the teachings of the cited references because Haigh's teachings would have allowed

Kilpatrick's method to identify and categorize text within documents in order to

overcome difficulties, time consuming and tedious while using rules or regular

expressions (page 1, paragraph [0011]).

26.   As per dependent claim 20, Kilpatrick, Haigh and Chan combined teaches

claim 14. Haigh teaches the claimed, utilizing said first numerical score for determining

said similarity, when said first string and said second string comprise numerical-type

strings and utilizing said second numerical score for determining said similarity, when

said first string or said second string comprise character-type strings (Fig. 7, page 5,

paragraph [0057]). Thus, it would have been obvious to one of ordinary skill in the data

processing art at the time of the invention, to have combined the teachings of the cited

references because Haigh's teachings would have allowed Kilpatrick's method to

identify and categorize text within documents in order to overcome difficulties, time

consuming and tedious while using rules or regular expressions (page 1, paragraph

[0011]).

Response to Arguments

27.   Applicant's arguments filed on 6/13/2006 with respect to claims 1-20 have been

fully considered but they are moot in view of the new ground(s) of rejection.

a)   Applicant's argument stated as "Applicants respectfully assert that the

independent claims 1, 6 and 14 do not claim a mathematical formula."

In response to Applicant argument, Examiner disagrees with argument

regarding claims 1-20 rejection under 35 U.S.C. 101 based on mathematical

abstract idea. In fact, applicant is claiming in claims 1, 6 and 14 as computation

of distance, matrix, numerical values and comparison of distances. These claims

do deal with simple computation. However, Examiner removed the word

"mathematical" from the rejection reason and still the claims have abstract ideas.

b)   Applicant's argument stated as "Aiken does not mention a Levenshtein

distance."

In response to Applicant argument, again Examiner disagrees because

Levenshtein distance is the same as edit distance, a person of ordinary skill in

the data processing dealing with strings will know this information. Aiken do

teach edit distance. However, Aiken reference is replaced with Chan reference to teach amended claims and argument moot.

Conclusion

28.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sathyanarayan Pannala whose telephone number is (571) 272-4115. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Sathyanarayan Pannala
Examiner
Art Unit 2164

srp
August 28, 2006